IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Art Unit	:	3661
Examiner	:	Gertrude A. Jeanglaude
Appln. No.	:	10/722,706
Applicant	:	Peter J. Schubert
Filing Date	:	November 23, 2003
Confirmation No.	:	7484
For	:	VEHICLE ROLLOVER SENSING USING ANGULAR ACCELEROMETER

AMENDED APPEAL BRIEF REPLACEMENT SECTION

RESPONSIVE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF (37 CFR §41.37)

In response to the Notice of Non-Compliant Appeal Brief mailed on March 27, 2007, Appellant hereby submits a replacement section providing a summary of the claimed subject matter as required by 37 C.F.R. 41.37(c)(1)(v). The Notification of Non-Compliant Appeal Brief stated that the summary of claimed subject matter fails to map each independent claim (1, 10, 18, and 25) to the specification by page and line number and to the drawings, if any. The following replacement section replaces the summary of the claimed subject matter and addresses the aforementioned concerns.

The fees required under §41.20(b)(2) have already been submitted and no additional fees are due. However, if there is any fee due in connection with the filing of this document, please charge the fee to our Deposit Account No. 16-2463.

I. Replacement Summary of Claimed Subject Matter

As described in the specification and illustrated in FIGS. 1-7 of Appellant's application for Letters Patent, the present invention recited in the finally rejected claims relates to a roll angle estimation apparatus, referred to in the specification as rollover sensing module 20, and method for predicting a future roll angle of a vehicle 10, and relates to a rollover sensing apparatus, also referred to as the rollover sensing module 20, and method for predicting an overturn condition of a vehicle 10 (see page 6, lines 6-8). According to one aspect of the present invention, the roll angle estimation apparatus 20, recited in independent claim 1, predicts a future roll angle ϕ_t of the vehicle 10. The roll angle estimation apparatus 20 includes an angular accelerometer 22 for sensing angular acceleration of a vehicle 10 and producing an output signal $\ddot{\phi}$ indicative thereof (see FIGS. 2 and 3 and page 6, lines 28-29). The roll angle estimation apparatus 20 also includes an integrator 40 for integrating the sensed angular acceleration signal $\ddot{\phi}$ and producing an angular rate $\dot{\phi}$ (see FIG. 3 and page 7, lines 19-24). The roll angle estimation apparatus 20 further includes a predictor 44 for predicting a future roll angle ϕ_t of the vehicle 10 as a function of the sensed angular acceleration $\ddot{\phi}$, the angular rate $\dot{\phi}$ and the current roll angle ϕ (see FIGS. 2 and 5 and page 8, lines 8-9).

According to another aspect of the present invention, as recited in independent claim 10, a rollover sensing apparatus 20, is provided for predicting an overturn condition for a vehicle 10. The rollover sensing apparatus 20 includes an angular accelerometer 20 for sensing angular acceleration of a vehicle 10 and producing an output signal $\ddot{\phi}$ indicative thereof (see FIGS. 2 and 3 and page 6, lines 28-29). The rollover sensing apparatus 20 also includes an integrator for integrating the sensed angular acceleration signal $\ddot{\phi}$ and producing an angular rate $\dot{\phi}$ (see FIG. 3 and page 7, lines 19-24). The rollover sensing apparatus 20 has a predictor for predicting a future roll angle ϕ_t of the vehicle 10 as a function of the sensed angular acceleration $\ddot{\phi}$, the angular rate $\dot{\phi}$, and a current roll angle ϕ (see FIGS. 2 and 5 and page 8, lines 8-9). The rollover sensing apparatus 20 further includes a comparator 46 for comparing the predicted future roll angle ϕ_t to a threshold value ϕ_O, and an output 31 for

generating an output signal indicative of an anticipated vehicle overturn condition prediction based on the comparison (see page 9, lines 13-21).

According to yet another aspect of the present invention, as recited in independent claim 18, a method 60 for estimating a future roll angle ϕ_t of a vehicle 10 is provided, which is particularly shown in FIG. 4 and described beginning at line 22 on page 8. The method 60 includes the step of sensing 64 angular acceleration $\ddot{\phi}$ of a vehicle 10 and producing an output signal indicative thereof (see page 8, lines 25-26). The method 60 also includes the step of integrating 76 the sensed angular acceleration signal $\ddot{\phi}$ to generate an angular rate $\dot{\phi}$ (see page 9, lines 6-9). The method 60 further includes the steps of obtaining 79 a current roll angle ϕ (see page 9, lines 9-10), and predicting 82 a future roll angle ϕ_t as a function of the sensed angular acceleration $\ddot{\phi}$, the angular rate $\dot{\phi}$, and the current roll angle ϕ (see Fig. 5 and page 8, lines 11-15).

According to a further aspect of the present invention, a method 60, as recited in independent claim 25, is provided for predicting an overturn condition of a vehicle 10, which is also shown in FIG. 4 and further described beginning at line 22 on page 8. The method 60 includes the steps of sensing 64 angular acceleration $\ddot{\phi}$ of a vehicle 10 and producing an output signal indicative thereof (see page 8, lines 25-26). The method 60 also includes the steps of integrating 76 the sensed angular acceleration signal $\ddot{\phi}$ and producing an angular rate $\dot{\phi}$ (see page 9, lines 6-9), and obtaining 79 a current roll angle ϕ (see page 9, lines 9-10). The method 60 also includes the step of predicting 82 a future roll angle ϕ_t as a function of the sensed angular acceleration $\ddot{\phi}$, the angular rate $\dot{\phi}$, and the current roll angle ϕ (see Fig. 5 and page 9, lines 11-15). The method 60 further includes the steps of comparing 84 the predicted future roll angle ϕ_t to a threshold value ϕ_O, and generating 86 a vehicle overturn condition signal based on the comparison (see page 9, lines 15-21).

II. Conclusion

The replacement summary of the claimed subject matter further maps each independent claim to the specification by page and line number and to the drawings, when necessary, in compliance with 37 CFR 41.37(c)(1)(v), to thereby overcome the Non-Compliant Appeal Brief. Appellant respectfully submits that the Appeal Brief is compliant and that the Appeal Board reverse the Examiner's rejection and pass the application to issuance.

Respectfully submitted,

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Date

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